SONY

3-757-581-21(1)

CD CDV LD Player

Operating Instructions

MDP-500/A500

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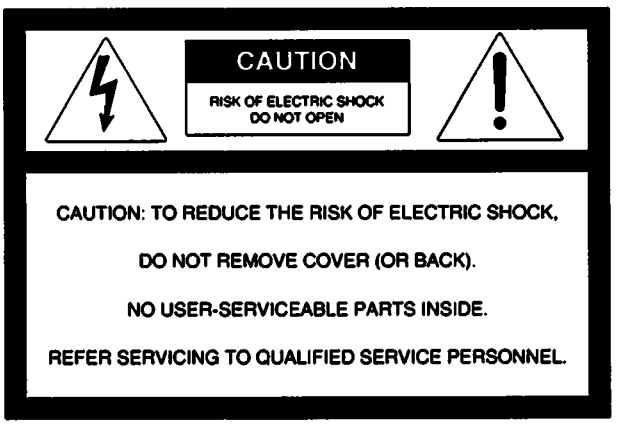
Owner' Record

The model number is located on the rear panel. The serial number is located on the top of the front panel. Record the model number and the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

This CD CDV LD player is classified as a CLASS 1 LASER product.

CAUTION

The use of optical instruments with the product will increase eye hazard.

As the laser beam used in this videodisc player is harmful to the eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

For Customers in the USA

INFORMATION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For Customers in CANADA

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

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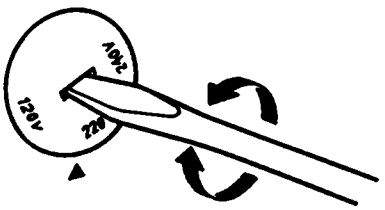
About Operating Voltage

Before operating the Multi Disc Player, make sure that the operating voltage of your unit is identical with that of your local power supply.

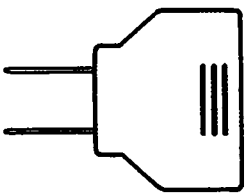
How to Determine the Correct Operating Voltage

- The MDP-500 operates at 120 V AC 60 Hz only and does not have a voltage selector.
- The MDP-A500 has a voltage selector.
  Before operating the unit, find out the local voltage, and if necessary reset the selector at the rear of the Multi Disc Player to the voltage corresponding to your local power supply (120, 220 or 240 volts AC). The voltage selector of this unit is set to 220 V AC originally. When using in Malaysia, reset the selector to 240 V AC.
  To reset the voltage selector, disconnect the power cord and turn the selector with a blade screwdriver so that the arrow on the rear panel points to the appropriate voltage.



How to Use the AC Plug Adaptor (supplied with the MDP-A500)

- If the AC plug on your MDP-A500 does not fit into the wall outlet, attach the supplied AC plug adaptor.



If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

Introduction

This introduction explains the features and principles of operation of the Multi Disc Player (MDP).

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Introduction to Your Player

The Multi Disc Player is capable of playing laser discs (LDs), compact discs (CDs), and compact disc videos (CDVs). As operating procedures are the same or similar for all discs, each procedure applies to all disc types.

Differences between models

This manual covers the MDP-500 and MDP-A500. Their differences are as follows:

	MDP-500	MDP-A500
Rear Panel		
• S VIDEO OUT output	equipped	not equipped
• CONTROL S IN input	equipped	not equipped
• Voltage selector	not equipped	equipped
• AC power cable	detachable	not detachable
Supplied accessories		
• AC plug adaptor	not supplied	supplied

The illustrations in this manual are of the MDP-500.

To Play a Laser Disc (LD), Compact Disc (CD) or Compact Disc Video (CDV)

With the MDP-500/A500, you can playback both sides of an LD without replacing it and resume playback from any point on an LD by simply pressing the PLAY (►) button —Auto Resume. Also unique to LD play are STILL/STEP for CAV LDs (see page 24) and FRAME/TIME search.

Most operations for CDs are comparable to those of LDs. The procedures for CLV LDs and CDs are also for the CDV's video and audio sections respectively. VSDs are CDVs that have no audio section.

What to Do First

Once you have read through this page, read "The Principles of Operation" (page 6), then go ahead and connect up the Multi Disc Player to your television and/or stereo system using the connection diagrams on pages 11 and 12. You will then be ready to play a disc.

The Principles of Operation

The MDP-500/A500 allows you to play discs by simple operation. Although some functions of the player vary depending on what type of disc (laser disc, compact disc or compact disc video) you are playing, keep in mind that the majority of the buttons on the player and Remote Commander have been designed to achieve a comparable effect for each type of disc. The following paragraphs briefly summarize what the basic Multi Disc Player functions allow you to do.

Primary Functions include the traditional functions of disc players.

Variable Speed Functions let you vary play speed so that you can easily locate ("search") scenes or tracks as you watch or listen.

Repeatable Functions memory functions that let you repeat playback. Because the player locates a point on the disc and starts playing according to your request, some repeatable functions also serve as "search" functions.

Auxiliary Functions additional functions that simply add to what you can do with the Multi Disc Player.

Primary Functions

Power
Open/Close
Play
Pause
Stop
Side A/B

Variable Speed Functions

Speed Scan (SCAN)
Still/Step Scan (STILL/STEP)

Repeatable Functions

Auto Resume Playback
Chapter/Track Search (ACS/AMS)
Frame/Time Search (FRAME/TIME)
Repeat Play (1/SIDE/ALL, REPEAT)

Auxiliary Functions

Sound Quality Functions: (AUDIO MONITOR, ANALOG/CX)
On-Screen Display (DISPLAY)

Playing Disc Types

The MDP-500/A500 Multi Disc Player integrates the functions of three machines into one: laser disc, compact disc, and compact disc video player. Below follows an explanation of the kinds of discs the Multi Disc Player can play.

The MDP-500/A500 Plays Three Classes of Optical/Digital Discs*

The MDP-500/A500 Multi Disc Player can play all three types of optical discs currently available for home entertainment. The following table illustrates their types and features.

Disc Class	Disc Logo	Disc Type	Size	Play Side	Play Time	
Laser Discs For movies, operas, and concerts		LD Single	8 in. (20 cm)	Single Side	CAV	14 min
					CLV	20 min
		8-inch LD	8 in. (20 cm)	Double Side	CAV	28 min
					CLV	40 min
		12-inch LD	12 in. (30 cm)	Double Side	CAV	1 hr
					CLV	2 hr
Compact Discs For music		CD Single	3 in. (8 cm)	Single Side	20 min	
		CD	5 in. (12 cm)	Single Side	74 min	
Compact Disc Videos For music videos and educational material (Digital Audio)		CDV	5 in. (12 cm)	Single Side	Video+Audio 5 min Audio 20 min	
		VSD	5 in. (12 cm)	Single Side	Video+Audio 5 min	

Multi Audio Discs

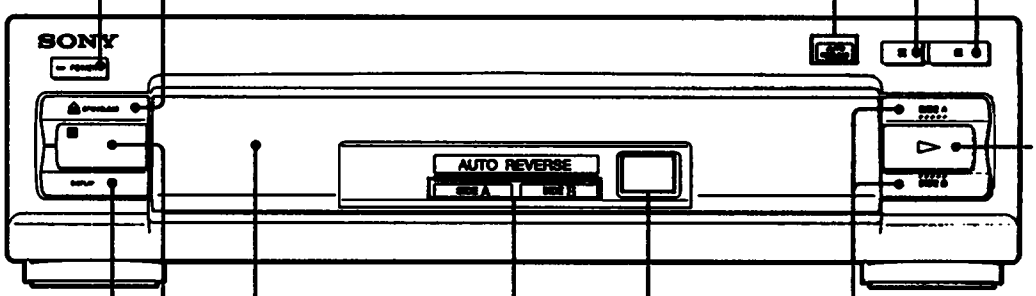
On laser discs bearing this logo, the analog tracks are recorded in multiplex, and the digital tracks are recorded in stereo.

* *These apply only to those discs recorded in the NTSC standard. The MDP-500/A500 cannot play CED, VHD discs or PAL video* discs, CD-ROM, CD-GRAPHICS, CD-I *discs, aluminum-lined discs or MD (MiniDisc) discs.*

Installation and Connection

Front and Rear Panel Controls and Supplied Accessories

Front Panel



⏏ OPEN/CLOSE button

POWER button and indicator
ON: Green
OFF: Off (MDP-500)
STANDBY: Red
(MDP-A500)

AUTO RESUME indicator
Lights up when you can resume playing an LD (see page 16)

II PAUSE button

■ STOP button

► PLAY button

DISPLAY button
Press the button to display messages on the TV screen.

Remote Commander sensor
Point the Remote Commander here to control the player.

Front Cover
Automatically slides down when you press the OPEN/CLOSE (⏏) button, and the disc tray comes out.

SIDE A/SIDE B buttons
Press to start playing from the beginning of side A or B of an LD.

Chapter/Track number display
Lights up to indicate the current chapter/track number
Examples:
- " 12 " appears while chapter/track 12 is played.
- " - - " flashes while the player searches for the beginning of the disc side.
- " 00 " appears while chapter "0"of an LD is played.
- While the player is stopped, "0" appears.
- Goes off when no disc is loaded

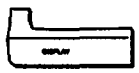
What is this indication?
This indication appears while the LD playing side is changing. The segments turn clockwise if changing from side A to B, counterclockwise if changing from side B to A.

SIDE A/SIDE B indicator
Lights up to indicate the current disc side
- SIDE "A" lights up
  - While a disc is loaded and the player stops
  - While side A of an LD is played or searched for
  - While a CD or CDV is played
- SIDE "B" lights up while side B of an LD is played or searched for
- Both the indicators go off when no disc is loaded.

Understanding Displays and Messages When Playing Discs

You can check the player operating status or disc information on the TV screen. Locate the DISPLAY button on the Remote Commander or the front panel of the player.

To View On-Screen Information

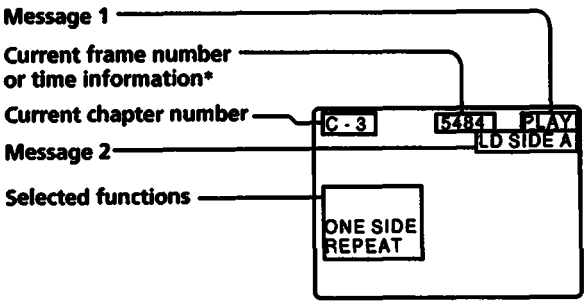


(Player)

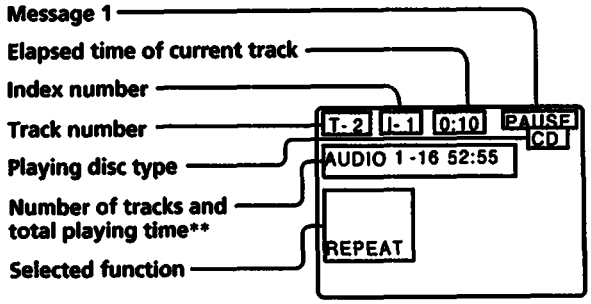
(Remote)

Press DISPLAY twice.
When pressing DISPLAY once, only the first line appears. The tables below are keys to the messages that appear on the right of the screen.

Display for LD



Display for CD or CDV



Message 1 (*Examples for LD*)

Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing LD
STOP	Operation stopped
PAUSE	Operation momentarily stopped
⏪/⏩	Speed scanning
SEARCH	Searching

Message 1 (*Examples for CD or CDV*)

Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing CD or CDV
STOP	Operation stopped
PAUSE	Operation momentarily stopped
⏪/⏩	Speed scanning
SEARCH	Searching

Message 2 (*Examples for LD*)

Screen Display	Currently Playing
LD SIDE A	Side A of LD
LD SIDE B	Side B of LD
1/L	First soundtrack/left channel
2/R	Second soundtrack/right channel
♪ DIGITAL	Digital sound
♪ ANALOG	Analog sound

To Turn Off the Display

(Player)

(Remote)

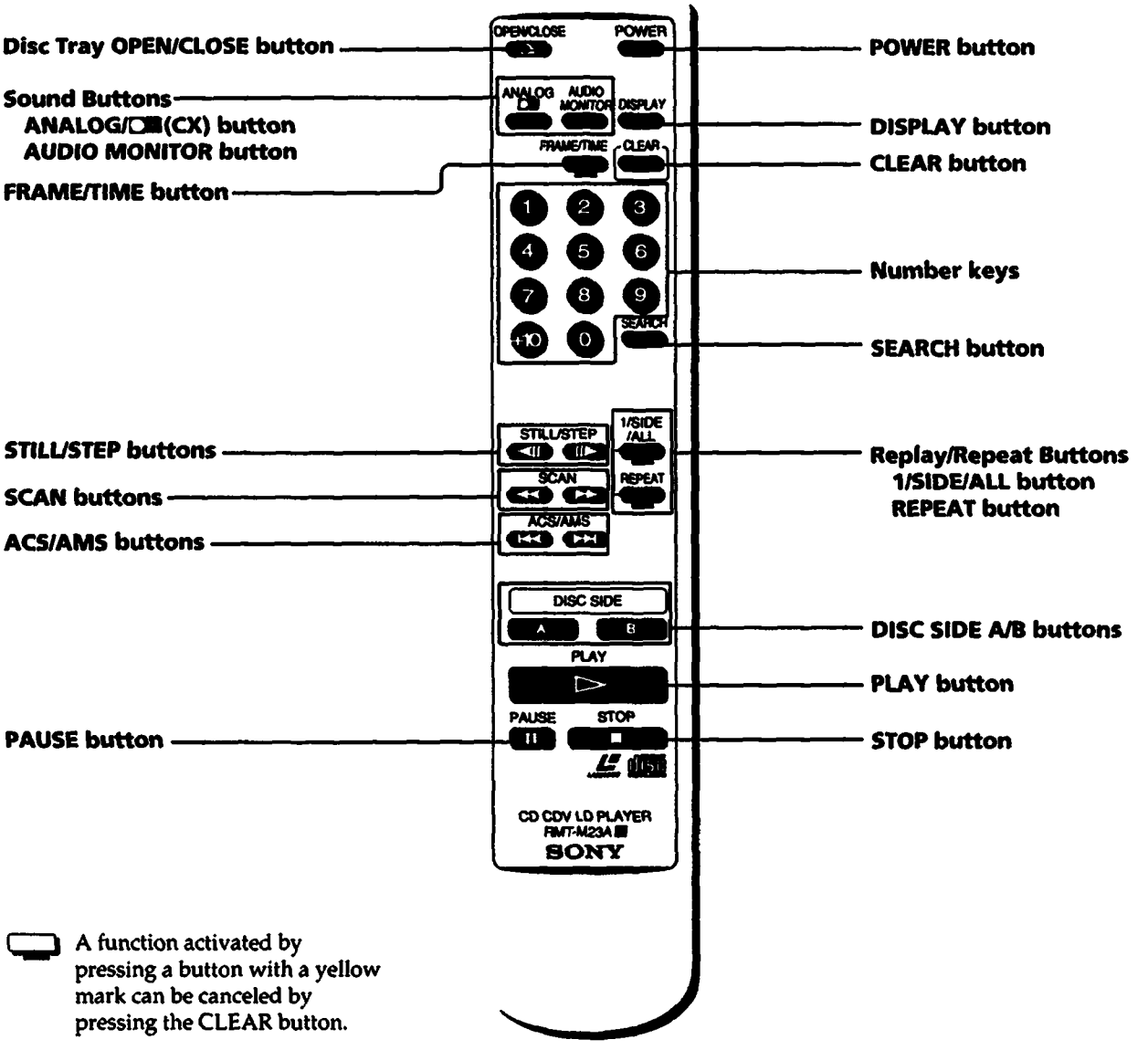
Press DISPLAY again.

* *When playing a CAV LD, the current frame number appears. When playing a CLV LD, the total elapsed time appears. CLV LDs not indicating time data to the second, indicate two-digit numbers such as "22:".*

** *When playing a CDV, the number of the track and total playing time of the video section also appear.*

Controls on the Remote Commander

You can use the Remote Commander to control the player or the identical buttons on the player itself.



A function activated by pressing a button with a yellow mark can be canceled by pressing the CLEAR button.

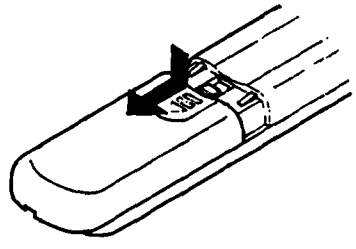
To Activate the Remote Commander

Open the back cover, and insert two size AA (R6) batteries according to the polarity indicated in the illustration. The batteries will last for about 6 months. If the range of the Remote Commander becomes noticeably short, replace all the batteries with new ones. If the Remote Commander is not to be used for a long time, remove the batteries to avoid damage from possible battery leakage.

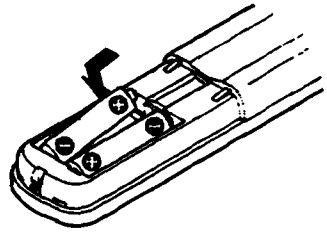
Remote Commander Precautions

- Do not let sunlight or powerful artificial light fall directly on the Remote Commander sensor on the front panel (of the player) as it may interfere with Remote Commander operation.
- Use size AA (R6) batteries only.

1



2

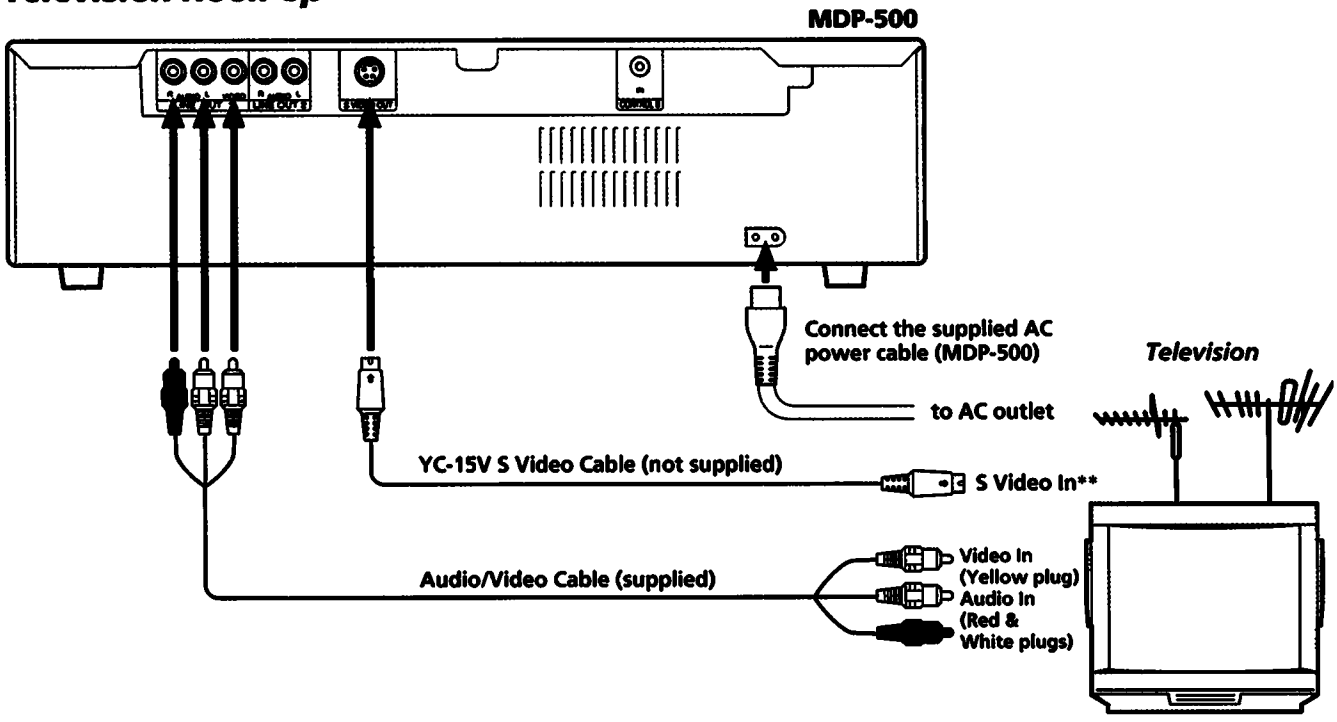


Insert two size AA (R6) batteries.

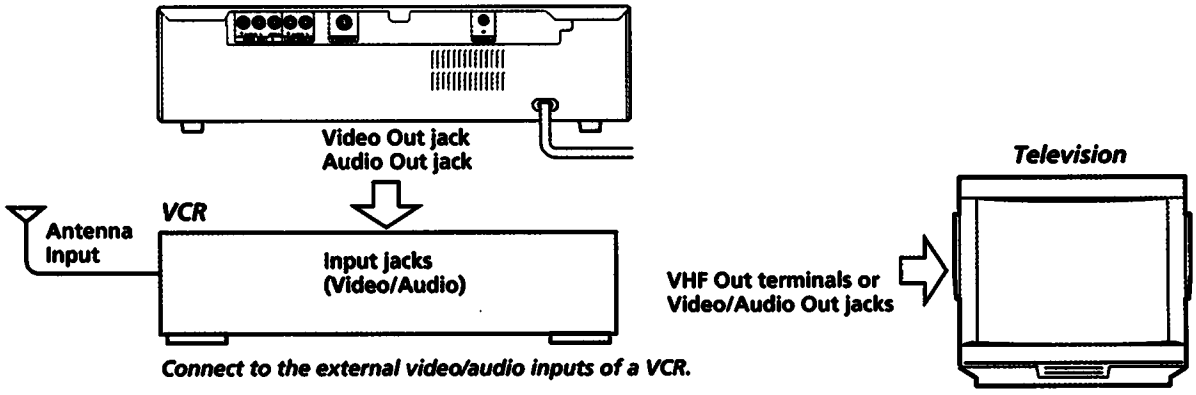
How to Connect the Television

To play LDs or CDVs, hook up a television to the Multi Disc Player. Take out the supplied audio/video connecting cable (yellow, red and white plugs). Use this to connect the player to the television.* Once you have hooked-up the television, set the input selector on the TV to "Video". Before connecting or disconnecting any of the cables, turn off all equipment.

Television Hook-Up



Television/VCR Hook-Up



Connect to the external video/audio inputs of a VCR.

Connecting Precautions

- Make sure all equipment is turned off before connecting or disconnecting any cables.
- Connection methods may differ; when in doubt about a connection consult the TV or VCR manufacturer's manual.
- If the sound or picture is disturbed by noise, try moving the equipment farther apart.
- Firmly insert plugs into the jacks. A loose connection may cause noise.
- To prevent later interference with TV broadcast reception, turn off all equipment connected but not currently in use.

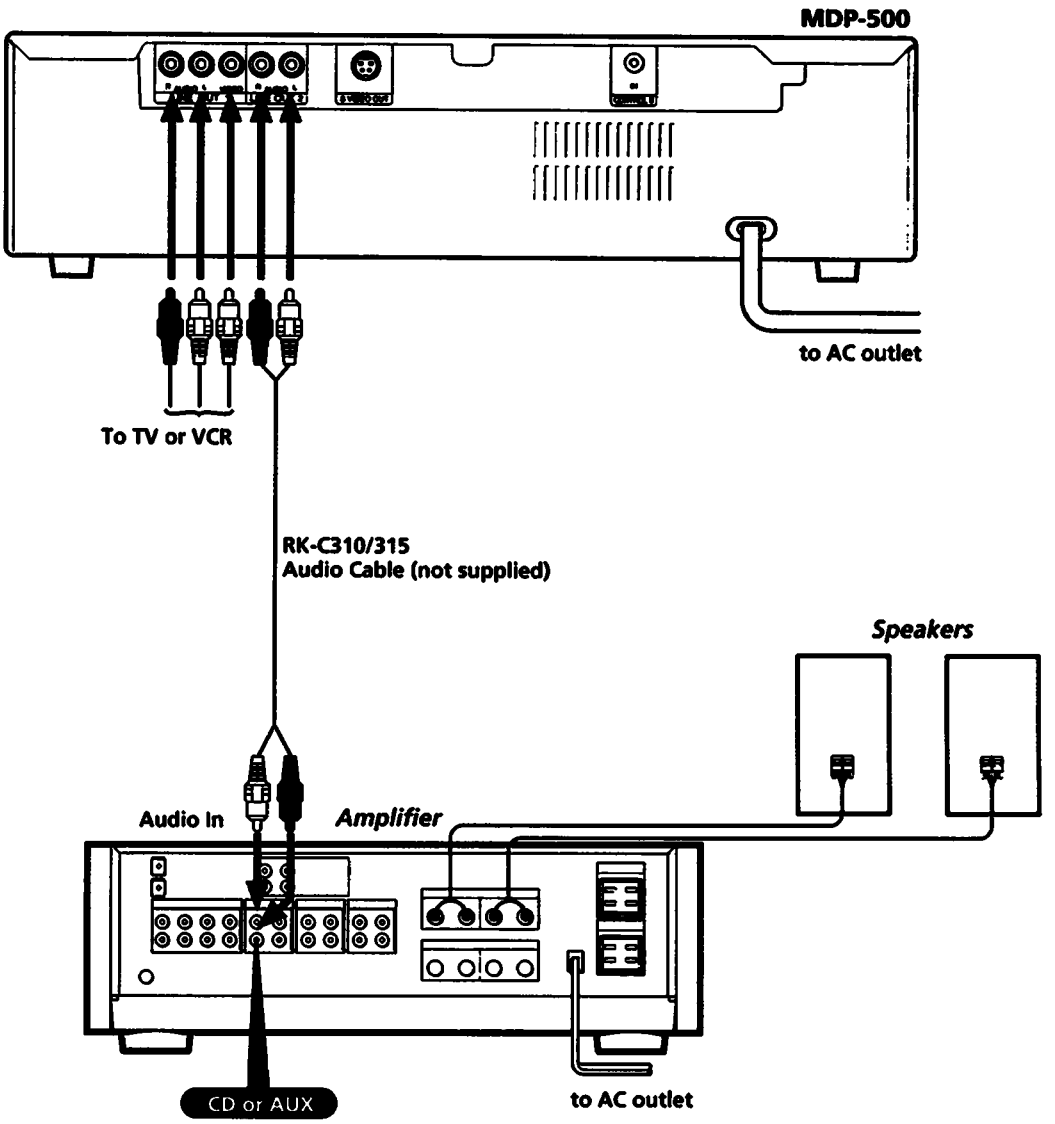
* *If the TV only has a monaural phono jack for audio input, use a VMC-910MS/915MS Connecting Cable (not supplied).*

** *With the MDP-500, you can use S Video connection. If your TV has an S Video Input jack, obtain a YC-15V S Video Connecting Cable and use it to connect the TV to your MDP-500 so that you can get a better image.*

How to Connect Audio Equipment

To achieve full stereo sound from your Multi Disc Player, hook up a stereo system following the diagram below. Use an RK-C310 (or RK-C315) audio connecting cable (not supplied) to connect the Multi Disc Player to your amplifier or receiver. Before connecting or disconnecting any of the below cables, turn off all equipment.

Audio Epuipment Hook-Up



Connection Precautions

- Make sure all equipment is turned off before making any of the above connections.
- Firmly insert plugs into the jacks. A loose connection may cause noise.
- When listening to a radio broadcast, switch off the Multi Disc Player to get better reception.

To Play a Disc

This section shows you how to conduct all the procedures associated with playing both LDs and CDs (CDVs).

How to Load and Play a Disc

After you have connected the Multi Disc Player to the TV and/or stereo system, you can begin playing a disc. Locate the POWER, OPEN/CLOSE, and PLAY buttons on the Remote Commander or the front panel of the player.

1 Turn on the multi disc player.

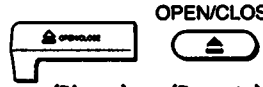
(Player) (Remote)

Press POWER on the player or Remote Commander.
You can also turn on the player by pressing OPEN/CLOSE (⏏) or PLAY (►) on the player. When using the Remote Commander, press POWER.

2 Turn on the TV and stereo system.

TV: Set the input selector on the TV to "Video".
Stereo System: Turn on the amplifier or receiver and select CD or AUX for audio output.

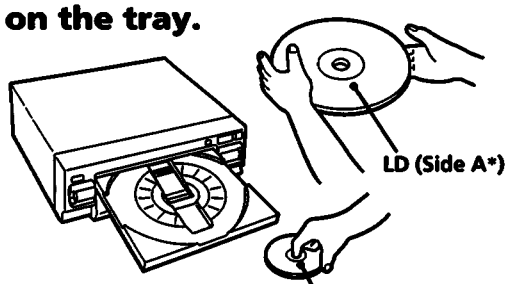
3 Open the disc tray.



(Player) (Remote)

Press OPEN/CLOSE (⏏).
The front cover of the player slides down and the disc tray comes out.

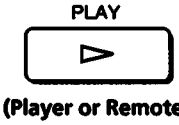
4 Place a disc on the tray.



Carefully center a single disc on the tray. If you insert more than one disc, or if the disc is not seated properly, it may not play or it may damage the player.

When playing a CD, do not use a CD stabilizer as it may cause damage to your disc or player.

5 Start playback.



(Player or Remote)

Press PLAY (►).
The disc tray closes and the disc starts playing.**
You can also start playing by pressing the disc tray to close it.

Do not transport the player while playing a disc as it may cause damage to the disc.

* *When playing an LD, the player determines that the upper side of the LD is side "A," and the other side is "B," regardless of the label "A" or "B" printed on the disc.*
** *When playback of the upper side of an LD (side A) ends, the other side (side B) starts playing automatically.*

To Advance or Reverse .....

(Remote)

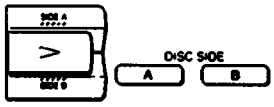
Hold down SCAN (◀◀ or ▶▶) on the Remote Commander

To Advance or Go Back a Chapter or Track at a Time....

(Remote)

Press ACS/AMS (I◀◀ or ▶▶I) on the Remote Commander.

To Start From the Beginning of Each LD Side .....



(Player) (Remote)

Press (DISC) SIDE A to play the upper side of the LD from the beginning.

Press (DISC) SIDE B to play the other side of the LD from the beginning.*

To Interrupt Playback.....

(Player or Remote)

Press PAUSE (II).
The sound mutes, and "PAUSE" appears on the TV screen. When playing a CAV disc, the picture freezes.** To resume playback, press PAUSE (II) or PLAY (▶).

To Stop Playback .....

(Player or Remote)

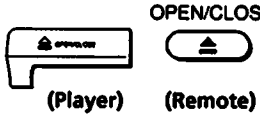
Press STOP (■).
To resume playback of an LD from the point you stopped at, press PLAY (▶) (see page 16). If you want to pause playing at the point before starting, press PAUSE (II) instead of PLAY (▶). To play again from the beginning of disc side A (or B), press (DISC) SIDE A (or B).

To Stop Playback and Turn the Power Off .....

(Player) (Remote)

Press POWER on the player or Remote Commander.
To resume playback of an LD from the point you stopped at, press PLAY(▶) (see page 16).

To Stop Play and Remove the Disc.....



(Player) (Remote)

Press OPEN/CLOSE (⏏).
Remove the disc and press ⏏ again to close the empty tray.

---

* *When playback of LD side B ends, the player stops playing. When playing a CD, playback stops if you press (DISC) SIDE B.*
** *When playing a CLV LD or the video section of CDV, the TV screen goes blank.*

To Pause the Player Just Before Starting .....

(Player or Remote)

Press PAUSE (II) after doing step 4 on page 13.
The tray closes, "PAUSE" appears on the TV screen, and the player waits at the start of the disc until you press PLAY (►) or PAUSE (II). If you want to play side B of an LD, press PAUSE (II), then (DISC) SIDE B.

To Play a Stereo Disc or a Second Audio Program (SAP) Disc .....

(Player or Remote) (Remote)

Press PLAY (►), then press AUDIO MONITOR on the Remote Commander.
This function alternates the sound output on a disc that has been recorded with two sound tracks, such as bilingual discs.

The procedure below indicates how the output and the display changes with each press.
The active track appears for three seconds on the TV screen. When you select 1/L (or 2/R), the sound of the left (or right) channel is output from both speakers.

Procedure	Screen message	Output Sound	
		Stereo Disc	SAP Disc
1 Press PLAY (►).	No message	Stereo (Both channels)	Soundtrack 1 (left channel) Soundtrack 2 (right channel)
2 Press AUDIO MONITOR.	1/L	Left channel	Soundtrack 1 (left channel)
3 Press AUDIO MONITOR again.	2/R	Right channel	Soundtrack 2 (right channel)
4 Press AUDIO MONITOR again to return to stereo status.	1/L 2/R	Stereo (Both channels)	Soundtrack 1 (left channel) Soundtrack 2 (right channel)

To Switch from Digital to Analog Sound (for LDs only*).....

(Remote)

Press ANALOG/◘■ on the Remote Commander to switch the player to analog or digital sound. Digital affords a better quality sound reproduction. If the LD contains a digital sound signal, the player automatically sends that output to the amplifier or receiver. To switch to analog sound, press ANALOG/◘■ on the Remote Commander. "♪ ANALOG " appears on screen for three seconds. To return to digital sound, press ANALOG/◘■ until "♪ DIGITAL" appears on screen. With certain discs there may be a difference in volume.

LDs with a ◘■(CX) Label .....

(Remote)

Discs bearing the ◘■ label are recorded with the CX noise reduction system, which gives lower noise levels and higher dynamic range on analog sound. The player detects most ◘■ discs and activates the CX noise reduction system automatically. When playing a ◘■ disc which does not contain a code to activate the CX noise reduction system, press ANALOG/◘■ on the Remote Commander until "CX ON" appears on screen. The CX noise reduction system will be activated.

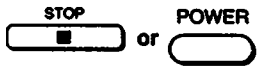
* *All CDs and CDVs output digital, not analog sound.*

How to Resume Playback—Auto Resume (only for LDs)

This function can only be used for LDs. Even if you press STOP (■) or POWER to stop playback, you can still continue viewing from the scene you stopped at.

To View From the Scene You Stopped at

1 Press STOP (■) or POWER to stop playback.



(Player or Remote)

The AUTO RESUME indicator on the front panel lights up and the point you stopped at is stored.* When you press POWER, the indicator lights up briefly, then goes off with the power.

2 Press PLAY (►).**

(Player or Remote)

The AUTO RESUME indicator lights up as the player searches for the scene where you stopped playing , then playback starts. If you want to pause playing just before starting, press PAUSE (❚❚) instead of PLAY(►).

* *The point where you stopped playing is cleared when:*
–you press OPEN/CLOSE (⏏), (DISC)SIDE A/B or ACS/AMS (I◄◄/►►I).
–you carry out Chapter Search or Frame/Time Search.

** *When the power is off, press PLAY(►) on the Front Panel. The player turns on automatically and resumes playback. When you use the Remote Commander, press POWER, then PLAY (►).*

How to Search for a Particular Point on a Disc

To find a particular point, play the disc in reverse or forward at high speed.* The sound is automatically muted while scanning an LD.** You can monitor sound while scanning a CD. Locate the SCAN ◄◄/►► buttons on the Remote Commander.

To Scan in Forward or Reverse .....

Hold down SCAN (►►) on the Remote Commander to forward scan.
Hold down SCAN (◄◄) to scan a disc in reverse.

To Resume Normal Playback .....

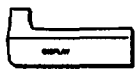
Release SCAN (◄◄ or ►►).

* *A certain amount of visual noise and instability is inevitable while scanning an LD or the video section of a CDV.*
** *When scanning a CLV LD or the video section of a CDV, frames are skipped.*

Understanding Displays and Messages When Playing Discs

You can check the player operating status or disc information on the TV screen. Locate the DISPLAY button on the Remote Commander or the front panel of the player.

To View On-Screen Information

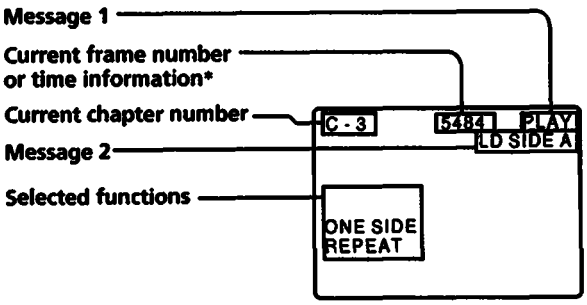


(Player)

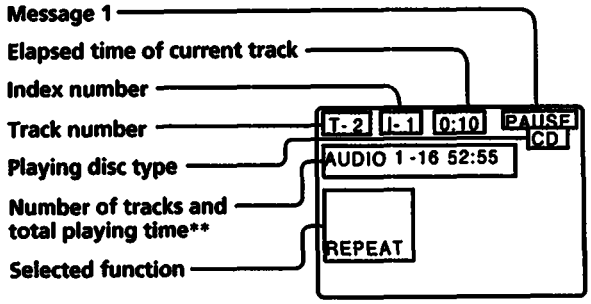
(Remote)

Press DISPLAY twice.
When pressing DISPLAY once, only the first line appears. The tables below are keys to the messages that appear on the right of the screen.

Display for LD



Display for CD or CDV



Message 1 (*Examples for LD*)

Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing LD
STOP	Operation stopped
PAUSE	Operation momentarily stopped
⏪/⏩	Speed scanning
SEARCH	Searching

Message 1 (*Examples for CD or CDV*)

Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing CD or CDV
STOP	Operation stopped
PAUSE	Operation momentarily stopped
⏪/⏩	Speed scanning
SEARCH	Searching

Message 2 (*Examples for LD*)

Screen Display	Currently Playing
LD SIDE A	Side A of LD
LD SIDE B	Side B of LD
1/L	First soundtrack/left channel
2/R	Second soundtrack/right channel
♪ DIGITAL	Digital sound
♪ ANALOG	Analog sound

To Turn Off the Display

(Player)

(Remote)

Press DISPLAY again.

* *When playing a CAV LD, the current frame number appears. When playing a CLV LD, the total elapsed time appears. CLV LDs not indicating time data to the second, indicate two-digit numbers such as "22:".*

** *When playing a CDV, the number of the track and total playing time of the video section also appear.*

How to Search by Chapter/Track Numbers

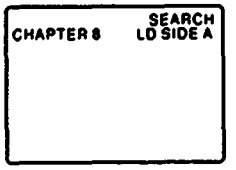
LDs are divided into sections called "chapters". CDs are divided into sections called "tracks". Chapters or tracks are usually listed on the jacket or label of the disc. By entering the desired chapter/track number, you can have the player find the chapter/track and play it. Use ACS/AMS (I◄◄ /►►I) —Automatic Chapter Sensing/Automatic Music Sensing—to advance or reverse a chapter at a time.* Locate the number keys and the ACS/AMS (I◄◄ /►►I) buttons on the Remote Commander.

To Locate a Particular Chapter or Track (Chapter/Track Search)

For example, to locate chapter 8, press "8" on the Remote Commander.**

Press one of the number keys on the Remote Commander corresponding to the chapter/track you want to play.

The player starts searching for Chapter 8.



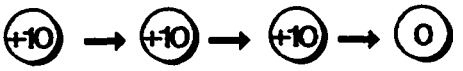
The player finds Chapter 8 and starts playing from the beginning of Chapter 8.

To Enter a Number Greater Than 10

Do this to make a numerical sum. For example, to enter 14, press +10 and 4; to enter 30, press +10, +10, +10 and 0.

Press +10 and one of the number keys.

..... "14"



..... "30"

If you make a mistake while entering numbers, press CLEAR on the Remote Commander, then enter the correct numbers.

To Check the Current Chapter/Track Number

The current chapter/track number lights up on the front panel. **Press DISPLAY** to display the chapter/track number in the upper left-hand corner of the screen. If the LD does not contain chapter numbers, the number is not displayed.

To Advance or Go Back a Chapter/Track at a Time (Skip Search)

Press ACS/AMS (I◄◄) on the Remote Commander once to return to the beginning of the current chapter/track.
Press ACS/AMS (►►I) to advance to the beginning of the next chapter/track.
Press ACS/AMS (I◄◄) twice before the picture reappears to return to the beginning of the previous chapter/track.
Hold down ACS/AMS (I◄◄ or ►►I) for continuous skip search.

To Resume Normal Playback

The player automatically resumes playback from the beginning of the selected chapter/track.

* *In addition to normal play mode, you can conduct Chapter/Track Search and Skip Search while in Freeze-Frame, Repeat or Pause mode. When the specified chapter or track is located after the search, playback continues in the same mode.*

** *Chapter Search does not function properly if the LD does not contain chapter numbers, or the chapter number entered does not exist.*

How to Search by Frame Number or Time —Frame/Time Search (only for LDs)

This function can only be used for LDs. Video scenes are counted as a series of still pictures or "frames". The player keeps track of the number of frames that have been played from the beginning of the disc to the current position. Similarly, the player also keeps track of the elapsed playing time from the beginning of the disc. To play from a particular frame or time, use the Frame/Time Search function. Locate the FRAME/TIME, SEARCH buttons, and number keys on the Remote Commander.

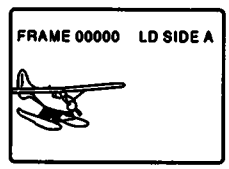
On CAV (standard-play) discs, enter a frame number.
On CLV (extended-play) discs, enter the time.*

To Enter the Elapsed Frame or Time

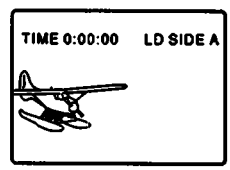
1 Press FRAME/TIME on the Remote Commander.

The screen displays "00000" (for CAVs) or "0:00:00" (for CLVs).

CAV (standard-play) disc



CLV (extended-play) disc

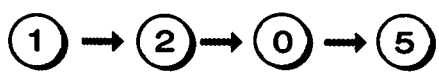


2 Enter the desired multi-digit number corresponding to the frame or time you want to find.

Enter five digits for CAVs.
Enter four digits for CLVs displaying the time to the second.
Enter two digits for CLVs displaying the time to the minute.

Sample Entry for CAV Discs
To locate frame number 12340, press the number keys in the order on the right:

Sample Entry for CLV Discs
To locate the 12-minute, 5-second point, press the number keys on the Remote Commander in the order on the right:



If you pressed the wrong key, press FRAME/TIME to clear the number, then enter the correct number.

3 Press SEARCH on the Remote Commander.

Play starts from the time or frame specified in step 2.**

To Check the Frame/Time Numbers .....

Press DISPLAY.
The current frame or current time number appears.

To Cancel Frame/Time Search .....

Press CLEAR on the Remote Commander before pressing the SEARCH button.

* *In addition to normal play mode, you can conduct Frame/Time Search while in Freeze-Frame, Repeat or Pause mode. When the specified frame or time is located after the search, play continues in the same mode.*

** *"CAV" or "CLV" should be noted somewhere on the disc jacket.*

How to Play Frame-by-Frame (only for CAV LDs)

Once you have found a particular scene on a CAV LD, you can examine the progression of that scene by advancing or reversing the action one frame at a time (Step Play),* or freezing the action into a still picture (Freeze Frame).*
Locate the STILL/STEP ◄II / II► buttons on the Remote Commander.

To Play One Frame at a Time (Step Play)

1 Press STILL/STEP (◄II or II►) on the Remote Commander once.

The frame freezes.

2 Press STILL/STEP (◄II or II►) repeatedly.
To reverse ◄II
To advance II►

Each press shifts the image one frame backward or forward.
Hold down the button for continuous frame-by-frame action.

To Freeze the Action (Freeze Frame) .....

(Player or Remote)

Press PAUSE (II) once.

To Resume Normal Play .....

(Player or Remote)

Press PLAY (►).

Extended-Play (CLV) Discs .....

Freeze Frame and Step Play are not possible with CLV discs. When STILL/STEP is pressed, the screen goes blank and the message "CLV SIDE A (or B)" appears. When PAUSE (II) is pressed, the screen goes blank and the message "PAUSE" appears.

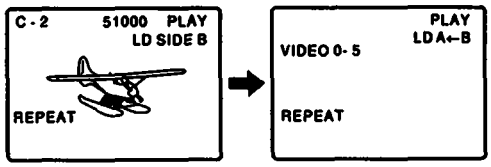
* *This function can only be performed on CAV LDs.*

How to Replay the Same Selections

These instructions show you how to set the player to play the same scenes or selections over and over until you signal the repetition to stop. You can replay both sides, a single side or one chapter of an LD, and a whole disc or a single track on a CD. Locate the REPEAT and 1/SIDE/ALL on the Remote Commander.

To Repeat the Whole Disc (Whole Disc Repeat) .....

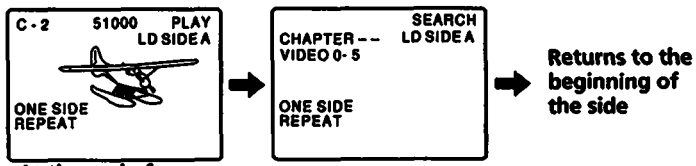
Press REPEAT on the Remote Commander. "REPEAT" appears on screen for three seconds. When playing an LD, the player repeats playing both disc sides, side A to B. When playing a CD or CDV, the player repeats playing all the tracks on the disc.



At the end of the disc

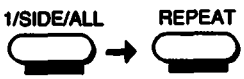
To Repeat the Current Side of the LD (One Side Repeat) .....

Press 1/SIDE/ALL twice, then REPEAT on the Remote Commander. "REPEAT" and "ONE SIDE" appear on the screen for three seconds.* The player repeats playing the current disc side.



At the end of one side of the disc

To Repeat the Current Chapter or Track (Single Repeat) .....



Press 1/SIDE/ALL once, then REPEAT. "REPEAT" and "SINGLE" appear on the screen for three seconds. The current chapter repeats continuously. If you press 1/SIDE/ALL once and do not press REPEAT, the player plays the current chapter/track once, then stops.

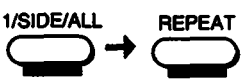
To Check the Replaying Status .....

Press DISPLAY twice.
Playing status information appears on the TV screen as shown above .

To Cancel Whole Repeat .....

Press REPEAT.**

To Cancel One Side Repeat .....



Press 1/SIDE/ALL once, then REPEAT.**

To Cancel Single Repeat .....

Press 1/SIDE/ALL twice, then REPEAT.**

* *"ONE SIDE" appears only when playing an LD.*

** *You can also cancel Whole Disc Repeat, One Side Repeat and Single Repeat by pressing CLEAR. "CLEAR" appears on the TV screen for three seconds.*

Additional Information

This section contains information that will help you if you have problems with your player. It also contains maintenance information and glossary.

Troubleshooting

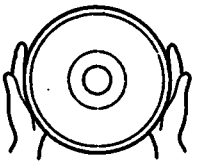
Check the following before requesting service.

Symptom	Point to check
No power	• AC Power cable properly connected?
PLAY (►) button or Number keys do not produce playback.	• Disc inserted? • Disc properly seated? • Label side of the CD facing upward?
No picture or sound	• TV or monitor switched on? • TV properly connected to player? • The input selector on TV set to "Video"?
Poor picture or sound quality	• TV properly connected? • Any source of noise nearby? • Disc dirty or scratched? • Any condensation on player objective lens?
No sound	• TV properly connected to player? • Volume control on TV, monitor, or amplifier high enough? • Playback at normal speed? (The player produces sound only during normal speed playback.)
Remote Commander does not operate.	• Batteries correctly inserted? • Batteries weak? • Any obstacles between the Remote Commander and the Sensor on the player? • The Remote Commander is pointed at the sensor on the player?
Picture distorted during scan.	• Some distortion in the lower part of the picture is normal – even for CAV discs.

Optical Disc Maintenance

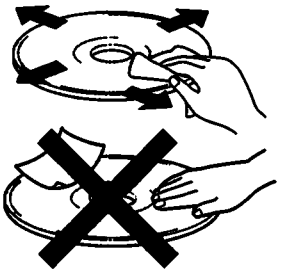
Holding CDs or CDVs
Hold CDs and CDVs by putting your index finger through the center hole and grasping the edges of the disc with the thumb and other fingers as pictured in the illustration.

Holding LDs
Hold LDs by grasping the outside edge in both hands as illustrated.



Light Exposure
Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave the disc in a car parked in direct sunlight where there can be a considerable rise in temperature.

Cracked or Damaged Discs
Do not play cracked or damaged discs, or try to play discs that have been repaired with adhesive glues.



Keeping the Disc Surface Clean
Clean the surface of the disc before playing, using a soft, dry cleaning cloth. Wipe the disc from the center out. Do not use solvents such as benzine, paint thinner, commercially available cleaners, or anti-static spray intended for LP record discs.
To prevent marring, after playing, remove the disc and put it back into its jacket.
Putting your fingers on, or adhering anything to the surface of the disc such as sticky note pad paper or adhesive tape will deteriorate the quality of the playing surface, and thus the output quality.

Player Maintenance and Safety

On Electrical Safety
- Should any foreign object or liquid fall into the cabinet of the player, unplug the player and have it checked by qualified personnel before operating it any further.
- Unplug the player from the wall outlet if you are not going to use it for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

On Player Location
- Avoid placing the player where there is:
  - — high humidity
  - — high temperature
  - — excessive dust
  - — mechanical vibration
  - — direct sunlight
- Allow adequate air circulation to prevent internal heat build-up. Do not place the player on surfaces such as shag pile rugs, blankets or near materials such as curtains, drapes that may block the ventilation holes.

On Moisture Condensation
- Do not operate the player where the temperature has risen suddenly or in a location where the temperature is radically different from the previous location because moisture may condense in the operating section of the player. Wait about an hour before turning the power on in a different location or keep the rise in the room temperature gradual.
- If you operate the player with moisture condensation, the player and the disc may be damaged. Therefore, remove the disc immediately when there is a possibility of moisture condensation.
- To evaporate moisture rapidly, leave the player turned on without a disc inside.

On Operation
- Remove the disc from the tray after playing it if you are not going to use the player for any length of time. Do not transport the player with a disc in place.
- When the disc tray is in the open position, do not press down on it forcefully, or place heavy objects on it.

On Cleaning
Clean the cabinet, panel, and controls with a soft dry cloth or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which may damage the finish.

On Repacking
Do not throw away the carton and the packing materials. The carton makes an ideal container to transport the player in.

Glossary

ACS/AMS Automatic Chapter Sensor/ Automatic Music Sensor is a function in the player that allows the laser beam to sense the beginning of chapters or tracks on a disc.

CAV Discs Constant Angular Velocity (CAV) or standard-play discs rotate at a constant 1800 r/min. Each track traced by the laser for a single rotation of the disc produces a single frame. Up to 54,000 frames make up each side of the disc, for up to 30 minutes of play. Each frame has a number that is stored with other data on the disc. When searching for a particular location on CAV discs, you must enter that "frame number".

Chapters Some laser discs are divided into sections, called chapters. These are analogous to tracks on CDs. Such discs usually have a numbered list of chapters on the jacket or label. Each chapter has been numbered for easy location when you use Chapter Search or Repeat functions.

CLV Discs Constant Linear Velocity (CLV) or extended-play discs double maximum playing time to 60 minutes by varying the rotational speed from a maximum of 1800 r/min to a minimum of 600 r/min as the laser beam moves away from the center of the disc. The disc surface therefore moves past the laser head at a constant rate, and each track is longer than its predecessor. For this reason, Variable Speed Play, Freeze Frame, and Step Play are not possible with CLV discs, so when searching for a scene on CLV discs you must enter the time instead of the frame number.

Digital Sound Recordings Sound translated into digital signals has a better signal-to-noise ratio. Therefore, digital sound recordings offer a higher quality reproduction than the alternative, analog recordings (found on LPs and older audio cassette tapes). However, some laser discs have been recorded in the higher-quality digital audio signal as well as the conventional analog type signal. This player reproduces both signals with priority given to the digital signal when it is encountered.

Indexes Signs marked in a track so that you can find a particular point on the disc easily.

MULTI AUDIO Disc Different sounds are recorded on analog and digital tracks. You can select either sound by switching one to the other.

SAP Second Audio Programs are double soundtrack recordings found on bilingual and karaoke (sing-along) recordings. Two completely different sound programs have been recorded on the disc. By pressing the AUDIO MONITOR button, you can switch from one sound track to the other.

Tracks CDs and CDVs are divided into sections, called tracks. Each track has been numbered for easy location when you use Track Search or Repeat functions. The tracks usually correspond to the selections on the disc.

Specifications

Type	CD/CDV/LD Player
Signal readout	Optical (Laser beam reflection)
Signal format system	EIA standard, NTSC color system
Playing time	

(minutes)

LD	CAV	30 cm (12 in) double-sided	60
		20 cm (8 in) double-sided	28
		20 cm (8 in) single-sided	14
	CLV	30 cm (12 in) double-sided	120
		20 cm (8 in) double-sided	40
		20 cm (8 in) single-sided	20
CD		12 cm (5 in) single-sided	74
		8 cm (3 in) single-sided	20
CDV		Audio portion	20
		Video portion	5
VSD		Video portion	5

Digital audio specifications

Frequency response	4 Hz to 20kHz (±0.5 dB)
Signal-to-noise ratio	More than 115 dB (EIAJ)*
Dynamic range	More than 99 dB (EIAJ)
Wow and flutter	Below measurement limit (±0.001% W.PEAK) (EIAJ)

Video specifications

Horizontal video resolution	425 lines
Signal-to-noise ratio	More than 49 dB

Input/output specifications

Video output 1	1.0 Vp-p, 75 ohms, unbalanced
Video output 2 (MDP-A500 only)	1.0 Vp-p, 75 ohms, unbalanced
Audio output 1, 2	Stereo L, R Analog: 200 mVrms (1 kHz, 40% modulation) Digital: 200 mVrms (1 kHz, –20 dB)
S Video output (MDP-500 only)	Luminance: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance: 0.286 Vp-p, 75 ohms, unbalanced
CONTROL S IN jack (MDP-500 only)	Mini jack

* Measured according to EIAJ (Electronic Industries Association of Japan) standards.

Power requirements

Power requirements	120VAC 60Hz (MDP-500) 120/220/240 V AC adjustable, 50/60 Hz (MDP-A500)
Power consumption	40 W
Mass	10 kg (22 lb)
Dimensions	Approx. 430 × 117 × 429 mm (w/h/d) ($17 \times 4\,5/8 \times 17$ in)
Operating temperature	+5 °C to +35 °C
Ambient humidity	5% to 90%

Remote Commander RMT-M23A

Principle of operation	Infrared pulse
Power requirements	3 V DC (2 size AA batteries)
Dimensions	Approx. 44 × 23.5 × 214.5 mm (w/h/d) ($1\,3/4 \times 15/16 \times 8\,1/2$ in)
Mass	Approx. 100 g (3.5 oz) (including batteries)

Supplied accessories

Remote Commander RMT-M23A (1)
Size AA (R6) batteries (2)
Audio/Video cable
(phono plug 3↔phono plug 3) (1)
AC power cable (1) (MDP-500 only)
AC plug adaptor (1) (MDP-A500 only)

Design and specifications are subject to change without notice.

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